## Norton Sound Summer Commercial Red King Crab Fishery Observer Project Summary Report, 1992

Ву

Elisabeth Brennan

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#### INTRODUCTION

The Norton Sound Section of the Northern Bering Sea District consists of all waters in statistical area Q that are north of the latitude of Cape Romanzof, east of 168 west longitude, and south of the latitude of Cape Prince of Wales (Figures 1 and 2). A large vessel summer commercial red king crab (<u>Paralithodes camtschatica</u>) fishery has existed in the Norton Sound Section since 1977. No summer commercial fishery occurred in 1991 due to a lack of staff to properly manage the fishery. The budget had been cut the previous winter.

The National Marine Fisheries Service conducted their triennial trawl survey to examine the abundance of Norton Sound red king crab in late August 1991. The results of that survey as compared to the 6 previous trawl surveys show a gradual trend of increasing abundance since the low of 1982, with 3.4 million pounds of legal king crab in the commercial fishing district in 1991. The quota for the Norton Sound Section for the 1992 season was therefore set at 300,000 pounds.

The 1992 summer commercial red king crab fishery opened at 12 noon, August 1 in the Norton Sound Section of the Eastern Bering Sea. The emergency order closure was also announced at that time for 12 noon, August 3.

Twenty seven vessels took part in the summer commercial crab season. these vessels were catcher/processors and each had an independent fishery observer on board. One ADF&G observer was placed on a catcher vessel. This is the third year subcontracted observers were placed on board commercial vessels in the Norton Sound Section. It is the tenth season an ADF&G observer was placed on board a crab vessel in Norton Sound. In 1989, the Board of Fisheries adopted a regulation (5AAC 39.645) mandating that all catcher/processors and floating processors which process shellfish have independent observers on board. These observers are certified by the ADF&G and work for independent contractors. The onboard observer program provides the only effective means of collecting essential biological and management data from vessels that process shellfish. This data is necessary in determining the magnitude and location of the commercial harvest and the status of the stock. The observers also provide the only effective means to enforce size and sex restriction regulations that will protect the resource. Catcher vessels are not required to have observers onboard, but may choose to allow an ADF&G observer onboard to collect data essential to the management of the fishery.

A new regulation (5AAC 34.925) was put into effect June 19, 1992 regarding pot limit. A king crab pot limit for statistical area Q states that no more than 100 pots may be operated from a vessel.

#### Objectives and Tasks

The specific objectives and tasks of the observer program are to:

- 1. Report daily the number of pots pulled and number of legal crab harvested for each statistical area fished by the vessel on which the observer is placed and by any vessels delivering to the observer's vessel.
- 2. Obtain and record daily 100 length frequency samples of harvested legal male red king crab (carapace width  $\geq 4-3/4$  inches), 100 length frequency samples of incidentally caught sublegal male red king crab, and at least 20 length frequency samples of incidentally caught female red king crab.
- 3. Determine the mean live weight of the harvested legal male crab.
- 4. Determine the carapace age of the sampled crab.
- 5. Determine the percentage of new recruits in the commercial harvest.
- 6. Determine the degree of ovigerity of sampled female red king crab.
- 7. Determine the percentage of illegal commercial harvest by sampling a minimum of 600 crab over the course of each day for legal size and sex.
- 8. Develop a relative abundance index for legal male, sublegal male and female king crab by recording the catch of as many pot lifts as is required to obtain a sample size of 300 or more crab per day.
- 9. Document bycatch species by number if possible (optional).

#### METHODS

The methods used during the 1992 commercial crab season for catch reporting, sampling crab, skipper interviews, and collecting information from tagged crab are presented in the ADF&G Shellfish Observer Field Manual and Addendum #1 to Observers Manual (found on the inside back cover of Observer Manual). This manual is available through the ADF&G commercial fishery office in Nome. The identity of vessels from which observer data was collected have been omitted from this report to maintain confidentiality.

Quality and quantity of the different types of data collected varied from observer to observer. Some data had statistical area information omitted. Length frequency data was partially lost by one observer when his briefcase fell into the water on his way to debriefing at the ADF&G office in Nome. One observer collected no bycatch data.

#### RESULTS

#### Harvest Summary

Catch reporting logs were kept by observers on each catcher/processor and by skippers of catcher vessels for each statistical area fished. Verbal reports were relayed 8:00 a.m., August 3 to the ADF&G office in Nome. The verbal reports indicated that six statistical areas were fished (Table 1).

Fish ticket reports document that five statistical areas were fished (Table 2). This data showed that this years largest fishing effort and greatest productivity occurred in statistical area 656401 (Table 2). Forty-seven percent of all pot lifts occurred in area 656401, 31% in area 666401, 7% in area 636401, 7% in area 636401, 7% in area 656330, and 7% in area 656330. Area 656401 accounted for 73% of the total harvest, area 666401 for 14%, area 656330 for 6%, area 666330 for 5%, and area 636401 for 2%. Total pots pulled from individual statistical areas were: 2714 pots in area 656401, 1804 pots in area 666401, 419 pots for area 636401, 421 pots in area 656330, and 388 pots in area 666330. Total harvest for individual areas were: 18,193 crab in area 656401, 3351 crab in area 666401, 1646 crab in area 656330, 1344 crab in area 656330, and 368 crab in area 636401. The total number of pots pulled during the season were 5,746 and the total commercial harvest was 24,902 crab. Total poundage was 74,029 pounds of crab.

Catcher Log Summary Sheets were kept by all six observers. Information was collected from four statistical areas and is presented in Table 3. The overall average soak time per pot was 15.3 hours. Observed catch per pot (CPP) of legal male red king crab by area were: 2.2 crab/pot in area 656401, 2.1 crab/pot in area 656330, 2.0 crab/pot in area 656401, and 0.6 crab/pot in area 636401. Overall observed CPP for legal male king crab was 1.9 crab/pot. Observed CCP standardized for a 24 hour soak period (CPP/24hr) for legal males was 3.9 in area 666401, 3.3 in area 656401, 2.4 in area 656330, and 0.7 in area 636401. Catch per pot from fish ticket data were 6.7 crab/pot in area 656401, 3.9 crab/pot in area 656330, 3.5 crab/pot in area 666330, 1.9 crab/pot in area 666401, and 0.9 crab/pot in area 636401. Overall CCP for the season was 4.3 crab/pot (Table 2).

Legal male red king crab made up 92% of the observed catch in area 656330, 75% in area 656401, 71% in area 666401, and 35% in area 636401 (Table 3). Approximately 70% of the overall observed catch were legal male crab. Sublegal male crab made up 23% of the overall observed catch and female crab 7% of the observed catch.

Five of the six observers provided usable information about illegal harvest on their vessels. A total of 3,474 harvested crab were sampled. Three crab, or 0.08%, were found to be illegal. Two of these illegal crab were sublegal males and one was a female blue king crab. The percent of illegal catch by individual vessels ranged from 0% to 0.7% of the harvest.

#### Legal Male King Crab

Carapace length, age and crab weight were collected by five observers from the catch of each vessel. One observer handed in partial data at debriefing. A few length frequency forms had no statistical area information recorded on them.

Carapace length measurements and were taken from 2,566 legal male red king crab in five statistical areas during the extent of the 1992 summer fishery. Carapace age was classified as new (11 months old) or old (at least 23 months old) (Table 4, Figure 3).

Overall mean carapace length of sampled legal male king crab was 119.7 mm. Mean carapace length of sampled legal males for separate statistical areas were: 117.5 mm in area 656401, 120.7 mm in area 666401, 120.9 mm in area 636401, 127.6 mm in area 656330, and 119.3 in area 666330 (Tables 5-9).

Crab with new shell carapace made up 71% of the total legal male king crab sampled while old shell crab made up 29% of the sample (Table 4). New shell crab made up 66.2% of the crab sampled in area 656401, 76% in area 666401, 65% in area 636401, 77% in area 656330, and 67% in area 666330 (Tables 5-9).

Recruit red king crab are defined as new shell, legal male king crab with a carapace length less than or equal to 115 mm. Recruit crab made up 28% of all legal male crab sampled (Table 4). Post recruit crab made up 72% of the legal male crab sampled. The recruit king crab composition ranged from 6 - 46% for individual statistical areas sampled throughout the fishery (Table 10). The total sampled male catch was composed of 13% prerecruits, 25% recruits, and 62% post recruits (Table 11).

The mean weight of legal red king crab was calculated from a sample of 463 individuals. Average weight ranged from 2.4 to 3.7 lbs./crab. The overall mean weight was 3.0 pounds (Table 12).

One purple pigmented legal red king crab was found during sampling. The crab was photographed.

Sublegal (prerecruit) Male King Crab

Carapace length measurement and shell age was collected from a sample of 598 sublegal male red king crab (Table 13, Figure 5). Data was collected from four statistical areas.

The overall mean length of the sublegal crab sampled was 87.7 mm (Table 13). Mean length for area 656401 was 90.9 mm, area 666401 was 87.7 mm, area 636401 73.1 mm, and area 656330 was 94.7 mm (Tables 14-17).

New shell crab made up 91% of the sample and old shell crab made up 9% of the overall sample (Table 13). The sample from area 656401 was made up of 89% new shell crab, area 666401 was made up of 90% new shell crab, and areas 636401 and 656330 were 100% new shell crab (Tables 14-17).

Overall observed mean catch of sublegal male king crab per pot, standardized to a 24 hour soak period (CPP/24hr) was 1 crab/pot (Table 3).

#### Female King Crab

Carapace length measurement and percent ovigerity was collected from a total of 167 female red king crab during the commercial fishery (Table 18, Figure 6). Data was collected from three statistical areas (Tables 18-21). Mature female king crab made up 77% of all females sampled. Immature female crab made up 23% of the sample. Seventy-three percent of the mature female crab were considered to have a high degree of ovigerity ( $\geq$ 60%).

The mean carapace length of mature female crab was 93.5 mm, and 66.8 mm for immature female crab (Table 18). In area 656401, 34 female crab were sampled. Mean carapace length was 66 mm for immature crab and 88.5 mm for mature crab. In area 666401, 92 female crab were sampled. Mean carapace length was 81 mm for immature crab and 97.7 mm for mature crab. In area 636401, 36 female crab were sampled. Mean carapace length was 66.3 mm for immature crab and 75 mm for mature crab (Tables 19-21).

Overall observed mean catch per pot of female king crab standardized to a 24 hour soak period (CPP/24hr) was 0.3 crab/pot (Table 3). All observers reported that most mature female red king crab sampled had dark purple eggs in their clutch.

#### Bycatch

Information on bycatch was collected to some degree by five of the six observers. Quantifiable data was collected by two observers. Other observes noted number of species or estimated the number without collecting number of pots pulled, soak time, and statistical areas. Quantifiable information collected shows at least 471 pots sampled for a total bycatch yield of 626 opilio tanner crab Chionoecetes opilio, 436 arctic lyre crab Hyas coarctatus, 166 blue king crab (135 female, 19 male, and 12 no sex recorded) Paralithodes platypus, 113 starry flounder Platichthys stellatus, 29 yellowfin sole Limanda aspera, 6 pacific cod Gadus macrocephalus, 5 korean hair crab Erimacrus isenbeckii, 4 pacific halibut Hippoglossus stenolepis, 3 sculpin, and 1 pollock Theragra chalcogramma. Observers recorded nonquantifiable information as "most pots had kelp crab and opilio", "numerous starfish and lyre crab", "lots" of starry flounder, yellowfin sole and sculpin, and "hundreds" of starfish.

One apparent "hybrid" red-blue king crab was found in a pot pulled from area 666401. It was a new shell crab with carapace length of 106 mm. The rostrum resembled that of a blue king crab, and had 3 pairs of prominent spines on the center of the carapace like that of a red king crab. Coloring was two toned (orange/blue) on legs, and the carapace was orange/red with blue/purple spotting. Several photos were taken to record the color and it was bagged and frozen and brought to the ADF&G office in Nome.

#### Tags

One crab was found with a tag during the commercial fishery. The crab was captured August 2, 1992 in statistical area 656330, in IO fathoms of water. Only the tag was recovered, no carapace length or age was collected. The tag ID was NX 01,860.

#### DISCUSSION

#### Harvest Summary

Five catcher/processor vessels and 22 catcher vessels took part in the 1992 summer commercial red king crab fishery in the Norton Sound Section.

Fish ticket records show area 656401 accounted for 47% of the pot pulls and 73% of the total harvest (Table 2). The total number of crab harvested was 24,902, total pots pulled was 5,746. The total harvest was 74,029 pounds. The harvest goal was 300,000 pounds.

Based on fish ticket reports, area 656401 had a CPP of 6.7, area 666401 had a CPP of 1.9 (Table 2). Overall catch per pot for the season was 4.3 crab/pot. Catch per pot standardized for a 24 hour soak period (CPP/24hr) was 3.0 overall. Observer crab catch summary shows area 656401 with 2.0 crab/pot and area 666401 with 2.2 crab/pot. Overall CPP from the observer summary was 1.9 crab/pot.

Legal male crab made up 75% of the observed catch in area 656401 and 71% of the observed catch in area 666401 (Table 3). These statistical areas are located relatively close to shore. Legal male crab made up 92% of the observed catch in area 656330 which is further offshore (Table 3). Adult male king crab are larger and tend to migrate offshore farther and faster than smaller sublegal male and female crab so this trend is expected. Legal male king crab made up 70% of the overall observed catch. Legal males tend to range farther offshore than sublegal.

Five of the six onboard observers sampled 3,474 crab from the commercial catch to determine the illegal harvest level on individual fishing vessels. Illegal catch levels ranged from 0% to 0.7% of the harvest. The illegal harvest was found to be 0.08% overall. This is well below the 3.0% limit thought to be citable by Fish and Wildlife Protection. The onboard observer program contributes a great deal to this low illegal harvest level.

#### Legal Male King Crab

The overall mean carapace length of sampled legal male red king crab was 119.7 mm. Sample size was 2566 crab. This is similar to data from previous years. Mean carapace length was 119.0 mm in 1988 (Gebhard and Lean, 1988), 119.8 mm in 1989 (Gebhard and Lean, 1989), and 121.1 mm in 1990 (Gebhard, 1990).

This seasons legal male new shell/old shell ratio was 71% new shell and 29% old shell (Table 4). Legal male new shell/old shell ratio in 1990 was 83% new shell and 17% old shell. In 1989 this ratio was 71% new shell and 29% old shell.

Total recruitment to the harvested stock was 28% of the population (Table 4). Total post recruits made up 72% of the harvested stock. This compares to the 1990 harvest, forwhich total recruits made up 21% and total post recruits made up 79% of the harvested stock. In 1989 recruits comprised 23% of the harvested stock, and in 1988 they comprised 25%.

In the observed male catch, prerecruits, recruits and post recruits made up 13%, 25%, and 62% of the harvested population (Table 11, Figure 4). In 1990 these figures were 21% prerecruits, 17% recruits, and 62% post recruits.

Mean weight of the harvested legal crab was 3.0 pounds per crab. Samples ranged from 2.4 to 3.7 pounds (Table 12). In 1990 average weight was 3.9 pounds, in 1989 average weight was 3.1 pounds, and in 1988 average weight was 3.2 pounds.

Sublegal (Prerecruit) Male King Crab

The overall mean length of the sampled sublegal male crab was 87.4 mm (Table 13). This is similar to mean lengths of 87.1 mm in 1990 and 88.4 mm in 1989.

New shell crab made up 90.9% of the total sublegal sample (Table 13). This is compared to 88% new shell crab in 1990, 75% in 1989, and 82% in 1988.

Overall observed mean catch of sublegal male red king crab standardized for a 24 hour soak period (CPP/24hr) was 1.0 crab/pot (Table 3). Samples were obtained from area 656401 (1.0 CCP/24hr), area 666401 (1.2 CPP/24hr), area 636401 (0.9 CPP/24hr), and area 656330 (0.2 CPP/24hr).

Female King Crab

Mature female red king crab made up 77% of females sampled throughout the duration of the fishery. Immature female crab made up 23% of the sample. This compares to 18% immature female crab in 1990, and 10% immature female crab in 1989.

Mean carapace length was 93.5 mm for mature female crab and 66.8 mm for immature female crab (Table 18). The sample size was 129 adult female crab and 38 immature female crab. Mean carapace length for adult female crab was 81.2 mm in 1990, 80.1 mm in 1989, and 82.5 mm in 1988. Immature female carapace length was 65.9 mm in 1990, 68.1 mm in 1989, and 67.6 mm in 1988.

A large portion of the mature female crab, 73%, was considered to have a high degree of ovigerity ( $\geq$  60%). This is a decline from previous years; 75% in 1990, 78% in 1989, and 89% in 1988. All observers noted that most mature female crab had dark purple eggs in their clutch. This indicated uneyed eggs. Eyed brown eggs are usually observed at this time of year.

Overall observed mean catch per pot of female red king crab standardized to a 24 hour soak period (CPP/24hr) was 0.3 crab/pot. This compares to 0.2 CPP/24hr in 1990 and 3.2 CPP/24hr in 1989.

#### Bycatch

Bycatch information was collected thoroughly by two observers, and to some degree by three others. This years bycatch included 11 identified species: opilio tanner crab, arctic lyre crab, blue king crab, starry flounder, yellow fin sole, pacific cod, korean hair crab, halibut, sculpin, pollock, and starfish. At least 471 pots from three different statistical areas were sampled for bycatch. Information was not collected in the systematic way it had been in previous seasons, therefore no estimated bycatch could be calculated.

One apparent "hybrid" red-blue king crab was found in a pot pulled from area 666401. The number of spines and coloring were different from what has been seen in the past.

#### National Marine Fisheries Service Trawl Survey

The National Marine Fisheries Service (NMFS) conducted their triennial survey of red king crab in Norton Sound August 22 to 30, 1991. Results show length frequency modes at about 70 mm and 110 mm for male crab, and at about 60 mm for female crab. The majority of crabs <80 mm were found to be recently molted. All females were new, hardshell crab. All female crab  $\geq$  80 mm were ovigerous. The NMFS estimated abundance of legal male red king crab in Norton Sound was 1.38 million crab, or 4.0 million pounds, of which 85% or 3.4 million pounds was in the legal fishing district. This compares to 1.78 million pounds in the fishing district in 1988 and 2.2 million pounds in 1985.

Data collected during the 1992 summer commercial fishery show immature king crab were not present as was indicated in the NMFS trawl survey. This difference may be due in part to the fact that the commercial catch sampled came from only five statistical areas and does not include waters closed to commercial fishing. The trawl survey included closed waters where smaller, immature male crab are more likely to be concentrated. Another reason for this difference may be commercial crab pots are not able to catch the smaller, immature crab a trawl will.

#### COMMENTS ON OBSERVER PROGRAM

This was the third season that independent observers were placed on board crab vessels during the summer commercial fishery in Norton Sound. All five independent observers had prior experience. Three of the five collected all required data. One observer turned in partial data at debriefing because his briefcase fell into the water. An audio cassette containing most of his data was damaged. One other observer did not collect all data due to the small number of crab his processor caught. Bycatch information was considered optional, and four of the six observers collected usable data.

Observers were given a half day orientation on July 30 to familiarize them with the information they were required to collect. This contributed to the high quality of data that was collected through the duration of the fishery. One change that might be made would be on the "Red King Crab Catcher Log Summary". A column should be included for longitude and latitude of each string observed. This would be valuable in determining the distribution of crab in specific statistical areas.

#### SUMMARY

This years fishing effort was concentrated in statistical area 656401 and 666401. The greatest percent of legal crab harvested was in area 656401. Mean carapace length of harvested legal crab was 199.7 mm and mean weight was 2.9 pounds. This season's legal male new shell/old shell ratio was 71% new shell to 29% old shell. Post recruit crab dominated the harvest - 71.5% of the harvested stock. Recruits composed 28.5% of the harvest. This was an increase in recruitment from 1990. The percent of female crab with a high degree of ovigerity was 73%. This was a decline from the previous years. Female ovigerity has undergone a moderate but steady decline during the period from 1987 to 1992 - 92% of adult female crab having a high degree of ovigerity in 1987 and 73% in 1992. Observers also noted most eggs were dark purple in color. Illegal harvest was 0.08%, well below the 3% guideline thought to be citable by Fish and Wildlife Protection. The onboard observer program is thought to contribute to this low level of illegal harvest.

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Table 1. Red king crab verbal catch reports for all fishing vessels by statistical area, Norton Sound Section, Eastern Bering Sea, for August'1, 12p.m. through August 3, 8 a.m. 1992.

	656401		666401		636401		656330		646330		646402	
Date	# pots	# crab	# pots	# crab	# pots	# crab	# pols	# crab	# pots	# crab	# pots	# crab
8/1~8/3	1550	6722	1696	3340	558	846	599	3248	25	692	118	1127
Catch per pot (CPP)		4.3		2.0		1.5		5.4		27.7		9.6
Percent of harvest (%)		42.1		20.9		5.3		20.3		4,3		7.1
Percent of pots pulled (%)		34,1		37.3		12.3		13.2		0.5		2.6

 Total Pots
 4546

 Total Harvest
 15975

 CPP
 3.5

Table 2. Red king crab season total catch (from fish ticket reports) by statistical area for Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

Statistical Area	Number	Pounds	Pots	Catch per pot (CPP)	Average Weight (Lbs.)	Percent pots pulled in stat. area (%)	Percent harvest in stat. area (%)
656401	18193	53119	2714	6.7	2.92	47.2	73.1
666401	3351	10632	1804	1.9	3.17	31.4	13.5
636401	368	1159	419	0.9	3.15	7.3	1.5
656330	1646	4814	421	3.9	2.92	7.3	6.6
666330	1344	4305	388	3.5	3.2	6.8	5.4
Total	24902	74029	5746	4.3	3.0	100	100

Table 3. Observer crab catch summary; number of observed pot lifts, average soak time, number of legal males, sublegal males, and females and proportion (%) of each captured by statistical area, and the corresponding mean number of crab caught per observed pot lift (CPP) and pot lift standardized to a 24 hour soak period (CPP/24hr), Norton Sound Section, Eastern Bering Sea, August 1–3, 1992.

Stat.	#Pot		Ave.		Lega	l Males		S	ublegal	males					
Area	Lifts  Obser	ved	Soak Time	   number	%	( CPP	CPP /24h	  number	%	CPP	CPP   /24h	number	%	] CPP	CPP   /24h
656401	ī	211	14.5	426	75.4%	2.0	3.3	124	21.9%	I 0.6	1.0	15	2,7%	0.1	0.1
666401	j	381	13,9	854	71.0%	,	3.9	254	21.1%	0.7	1.2	i 95 l	7.9%	0.2	0.4
636401		102	19.8	59	34.7%	•	0.7	74	43.5%		0.9	37	21,8%	0.4	0.4
656330	İ	39	20.8	81	92.0%	2.1	2.4	7	8.0%	!	0.2	0	0.0%	0.0	0.0
TOTAL		733	15.3	1420		1.9	3.0	459		0.6	1.0	147		0.2	0.3
Percent of Total		atch		2026	70.1%			,	22.7%				7.3%		

Table 4. Carapace length measurement summary of sampled (egal male red king crab captured during the commercial king crab harvest.

Norton Sound Section, Eastern Bering See, August 1-3, 1992

Carapace )	Vow shot	J Ave		OHOISHeit I	Ave			Total	
Length	No. L	елоўт			Length		I I No.	Ave Length	
(mm)		Calc.	%		Celc	%		Catc.	9
98 [		0.00	0.0%	<u> </u>	0.00	0.0%	1 0	0.00	0.0%
99	3	0.05	0.1%	1	0.13	0.1%		0.08	0.1%
100	3	0.16	0.2%		0.00	0.0%		0.12	0.1%
101	6	0.33	0.3%		0.00	0.0%		0.24	0.2%
102	12	0.57	0.7%		0.27	0.3%		0.56	0,5%
103	22	1.25	1.2%		0.55	0.5%		1.04	1.0%
104   105	20 42	1.14 2.42	1.1%		1.25 2.39	1.2%		1.18	1.1%
106	39	2.27	2.9% 2.1%	•	1.42	2.3% 1.3%		2.41	2.3%
107	54	3.17	3.0%	-	1.43	1.9%		2.02 2.67	1,9% 2,5%
106	53	3.15	2.9%		2.75	2.5%		3.03	2.8%
109 }	51	3.05	2.8%		2.83	2.4%		2.93	2.7%
110	63	3.81	3.5%		3.83	3.5%		3.82	3.5%
111 [	57	3.48	3.1%		4,17	3.8%		3.68	3.3%
112	75	4.62	4.1%	37	5.55	5.0%	112	4.89	4.4%
113 [	81	3.79	3.4%	29	4.39	3.9%	90	8.95	3.5%
114	75	4.70	4.1%		5.81	5.1%		5.02	4.4%
115	96	6.07	5.3%		7.09	6.2%		0.36	5.5%
116	55	3.51	3.0%		4.82	4.2%		3.89	3.4%
117	55	3.54	3.0%		4.23	3.8%		3.74	3.2%
116	81	5.25	4.5%		8.17	5.2%		5.52	4.7%
119	55	3.60	3.0%		3.99	3.4% (		3.71	3.1%
120	76 71	5.01 4.72	4.2%   3.9%		6.92 3.73	5.8%   3.1%		5.57 4.43	4.8% 3.7%
121   122	66	4.42	3.5%		5.72	4.7%		4.80	3.9%
123	52	3.51	2.9%		3.96	3.2%		3.84	3.0%
124	48	3.27	2.6%		3.16	2.5%		3.24	2.5%
125	49	3.37	2.7%		3.59	2.9%		3.46	2.8%
126	38	2.63	2.1%		2.87	2.3%		2.70	2.1%
127	50	3,49	2.7%		1.70	1_3%	60	2.97	2.3%
128	26	1.83	1.4%	19	3.26	2.5%	45	2.24	1.8%
129	34	2.41	1.9%	13	2.25	1.7%	47	2.38	1.8%
130 (	24	1.71	1.3%		2.79	2.1%		2.03	1.8%
131	21	2.23	1.7%		2.48	1.9% (		2.30	1.8%
132	32	2.32	1.8%		1.77	1.3%		2.18	1.6%
133	18	1.32	1.0%		2,32	3.7%		1.61	1.2%
134 [	19	1,40	1.0%		1.62	1.2%		1.48	1.1%
135 [	21	1.56	1.2%		0.90	0.7%		1.37	1.0%
136 [	19 20	1.42	1.0%		1.64 0.18	1.2% 0.1%		1.48	1.1% 0.8%
197   138	19	1.51 1.44	1.1%	•	0.00	0.0%		1.02	0.7%
139	12	0.92	0.7%		0.56	0.4%		0.81	0.6%
140	18	1.38	10%		0.94	0.7%		1.25	0.9%
141	16	1.24	0.9%		0.19	0.1%		0.93	0.7%
142	16	1.25	0.9%		0.19	0.1%		0.94	0.7%
143 [	11	0.85	0.6%	1	0.19	0.1%	12	0.67	0.5%
144	9	0.71	0.5%	2	0.39	0.3%	11	0.62	0.4%
145	12	0.95	0.7%		0.78	0.5%	16	0.90	0.6%
146 (	4	0.32	0.2%	•	0.00	0.0%		0.23	0.2%
147 [	5	0.40	0.3%		0.20	0.1%		0.34	0.2%
148	7	0.57	0.4%		0.99	۵.7%		0.69	0.5%
149 [	4	0.33	0.2%		0.20	0.1%		0.29	0.2%
150	2	0.16	0.1%		0.00	0.0%		0.12	0.1%
151	4	0.33	0.2%	•	0.40	0.3%		0.35	0.2%
152	2	0.17	0.1%		0.20	0.1%		0.18	0.1%
153	1	0.08	0.1%		0.00	0.0%		0.08	0.0%
154   155	2	0,17 0.09	0.1%   0.1%		0.00	0.1%		0.18	0.1% 0.0%
156	'	0.00	0.0%		0.00	0.0%		0.00	0.0%
157		0.00	0.0%		0.00	0.0%		0.00	0.0%
158	1	0.09	0.1%		0.00	0.0%		0.06	0.0%
159	-	0.00	0.0%		0.00	0.0%		0.00	0.0%
160		0.00	0.0%		0.00	0.0%		0.00	0.0%
181		0.00	0.0%		0.00	0.0%	0	0.00	0.0%
182		0.00	0.0%		0.00	0.0% (		0.00	0.0%
163		0.00	0.0%		0.00	0.0%		0.00	0.0%
164	2	0.18	0.1%		0.00	0.0% (		0.13	0.1%
165 [	1	0.09	0.1%		0.00	0.0% (		0.06	0.0%
170 ( 171 )	1	0.09	0.1%		0.00	0.0% (		0,07 0.00	0.0%
otal No.	1820		70.9%			29.1%	2566		100.0%
Sean	1020	120.0	į		119.2	14.12	2500	119.7	100.0 8
otal legals			2566	l					
			730						
otal Recruits Percent  otal Post Rec			25.4% 1835						

Table 5. Carapace length measurement summary of sampled legel male red king crab captured in statistical area 656401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1-3 1992.

N	ew shell			Old shell				Total		
arapace	2141	Ave	t	014 214#	Ava		1	Ava	1	
Length	No. L	ength	i	No. L	angth			angth	i	
(mm)		Calc	– sj		Cale.	*	•	Calc.	- ≰j	
96		0.00	0.0%		0.00	0.0%		0.00	0.0%	
99		0.00	0.0%		0.00	0.0%		0.00	0.0%	
100   101	2	0.35 0.35	0.4%		0.00	0.0%		0.23	0.2% [	
101	7	1.28	1.2%		0.00	0.0%	-	0.84	0.8%	
103 [	5	0.91	0.9%	2	0.72	0.7%	•	0.85	0.8%	
104	6	1,10	1.1%	7	2.53	2.4%	•	1.58	1.5%	
105	17	3.16	3.0%	5	1.82	1.7%	•	2.71	2.6%	
106	14	2.53	2.5%	5	1.64	1.7%		2.38	2.2%	
107	27	5.11	4.8%	4	1.49	1.4%	31	3.89	3.6%	
108	17	3.25	8.0%	5	1,68	1.7%	22	2.79	2.6%	
109 [	21	4.05	3.7%	8	2.27	21%	[ 27	3.45	3.2%	
110 [	25	6.06	4.5%	10	3.52	3.5%	-	4.64	4.2%	
អអ្	18	3.54	3.2%	10	3.65	3.5%		3.84	3.9%	
112]	26	5.16	4.6%	21	8.17	7.3%		6.17	5.5%	
113 (	25	5.20	4.6%	12	4.71	4.2%	•	5.03	4.5%	
114 {	21	4.24	3.7%	19	7.52	6.6%		5.35	4.7%	
115 }	31	6.31	6.5%	24 15	9.5B 6.04	8.3% 5.2%		7.42 4.35	8.4%   3.8%	
118	17 25	9.49 6.18	3.0%   4.4%	10	4.06	9.5%		4.80	4.1%	
117 } 118 }	24	5.01	4.2%	13	5.83	4.5%		5.12	4.3%	
119	25	5 27	4.4%		5.37	4.5%		5.30	4.5%	
120	26	6.52	4,6%		7.50	6.3%		6. 19	5.2%	
121	22	4.71	3.9%		2.10	1.7%	•	3.B3	3.2%	
122	21	4.53	3.7%		7.63	6.3%		5.58	4.6%	
123	14	3.05	2.5%		4.27	3.5%		3.45	2.6%	
124	- 11	2.41	1.9%		3.88	3.1%		2.9 ſ	2.3%	
125	16	3.54	2.8%	8	3.47	2.8%		3.52	2.8%	
126	11	2.45	1.9%		1.75	1.4%		2.22	1.6%	
127	11	2.47	1.9%		2.20	1.7%	•	2.38	1.9%	
128	5	1,13	0.9%		2.67	2.1%		1.65	1.9% [	
129	10	2.28	1.8%		0.45	0.3%		1.66	1.3%	
130	4	0.92	0.7%		09.0	0.7%	•	0.91	0.7%	
131	6	1.39	1,1%		1.38	1.0%	-	1.38	1.1%	
132   133	7	1.64 0.47	1.2%		1.83	1.4% 0.7%		1.70 0. <b>5</b> 2	1.3%   0.5%	
134	2	0.47	0.4%		2.79	2.1%		1.25	0.9%	
135	4	0.96	0.7%		0.00	0.0%		0.53	0.5%	
138	5	1.20	0.9%		1.42	1.0%	•	1,28	0.9%	
137 ]	4	0.97	0.7%		0.00	0.0%	•	0.54	0.5%	
138 )	5	1,22	0.9%		0.00	0.0%	•	0.81	D.6%	
139	1	0.25	0.2%		0.00	0.0%		0.18	0.1%	
140	4	0.99	0.7%	ſ	0.49	0.3%		0.82	0.6%	
141 ]	3	0.75	0.5%		0.00	0.0%	j 3	0.50	0.4%	
142	đ	2.01	1,4%		0.00	0.0%	j ð	1.33	0.9%	
143	1	0.25	0.2%		0.00	0.0%		0.17	0.1%	
144	1	0.25	0.2%		0.00	0.0%	,	0.17	0.1%	
145	1	0.26	0.2%	1	0.50	0.3%		0.34	0.2% ]	
146		0.00	0.0%		0.00	0.0%		0.00	0.0% ]	
147 ]	_	0.00	0.0%		0.00	0.0%		0.00	0.0% [	
148 (	1	0.26	0.2%		0.00	0.0%	•	0.17	0.1% [	
149 (	1	0.26	0.2%		0.00	0.0%	•	0.17	0.1%   0.0%	
150 ( 151		0.00	0.0%		0.00	0.0%		0.00	0.0%	
152	1	0.27	0.0%		0.00	0.0%		0.18	0.1%	
153		0.00	0.0%		0.00	0.0%	-	0.00	0.0%	
154		0.00	0.0%		0.53	0.3%		0.18	0.1%	
155		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
156		0.00	0.0%		0.00	0.0%		0.00	0.0%	
157		0.00	0.0%		0.00	0.0%		0.00	0.0%	
158		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
159 {		0.00	0.0%		0.00	0.0%		0.00	0.0%	
160		0.00	0.0%		0.00	0.0%	j o	0.00	0.0%	
181 [		0.00	0.0%		0.00	0.0%		0.00	0.0%	
162 [		0.00	0.0%		0.00	0.0%		0.00	0.0%	
163		0.00	0.0%		0.00	0.0%		0.00	0.0%	
184		0.00	0.0%		0.00	JP0.0	•	0.00	0.0% [	
165		0.00	0.0%		0.00	0.0%	0	0.00	0.0%	
out No. ]	SEF		88.00 1	201		22.0~	000		100.00	
	565	117.5	86.2%	288	1174	33.8%	853	1176	100.0% }	
		117.5	   		117.0			117.5	J	
tal legels			653							
mi iedola			624							
(a) Recruits			266							
			31.2%							
Percent			J 11.2 70							
Percent										
Percent Bal Post Reco	uila		587							
	ui <b>la</b>		587 88.8%							
el Post Rec	uila			15						

Table 6. Carapace length measurement summary of sampled legal male red king crab captured in statistical area 556401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1 - 3 1992.

Vepace	New shall	Ave		Old shell	Ave		1	Total Ave	
Length	No. Ca			No. L	ength		No.	Langth	
(mm)		Calc	*	I	Calc	*	I	Calc.	*
96		0.00	0.0%	I	0.00	0.0%	1 0	0.00	0.0%
99	1	0.22	0.2%		0.00	0.0%	•	0.17	0.2%
100 )	1	0.22	0.2%		0.00	0.0%		0.17	0.2%
101	1	0.22 0.22	0.2% 0.2%		0.00 1.45	0.0%	-	0.17 0,51	0.2% 0.5%
103	و و	2.04	2.0%		2.12	2.1%		2.06	2.0%
104	5	1.15	1.1%		0.71	0.7%		1.04	1.0%
105 (	ð	1.85	1.8%	6	4.32	4.1%	14	2.45	2.3%
106	12	2.80	2.6%		1.45	1.4%		2.47	2.3%
107	10	2.36	2.2%		1.47	1.4%		214	2.0%
108   109	12	2.85 2.18	2.6%		2.96 0.75	2.7%   0.7%		2.86 -1.82	2.7% 1.7%
110	11	2.67	2.4%		3.77	3.4%		2.93	2.7%
111	17	4.16	3.7%		3,04	2.7%		3.89	3.5%
112]	25	8.17	5.5%	3	2.30	21%	28	5.23	4.7%
113 ]	8	1.99	1.6%		3.10	2.7%		2.26	2.0%
114	25	6.26	5.5%		3.90	3.4%	•	5.70	5.0%
115   116 (	23 13	5.63 3.32	5.1%		5.61 8. <b>3</b> 8	4.8% 5.5%		5.75 4.06	5.0% 9.5%
117 }	ā	2.06	1.6%		6.61	4.8%		2.93	2.5%
116 (	17	4.42	3.7%		9.70	8.2%		5.70	4.8%
119 }	12	9.15	2.6%	4	3.26	27%	16	3.17	2.7%
120	18	4.76	4.0%		2.47	21%		4.20	3.5%
121	14	9.73	3.1%		4.97	4.1%		4.03	3.3%
122 { 123	13	3.49	2.9%		4.18 4.21	3.4%		3.66 3.69	3.0% 3.0%
123	13 15	8,52 4,10	3.3%		3.40	27%		3.93	3.2%
125	9	2.48	2.0%		5.14	4,1%		3.13	7.5%
126	8	2.22	1.6%		3.45	2,7%		2.52	2.0%
127	16	4.48	3.5%	2	1.74	1.4%	18	3.61	3.0%
128	9	2.54	2.0%		3.51	2.7%		2.77	2.2%
129	10	284	2.2%		4.42	3.4%		3.23	2.5%
190	4	2.58 1.15	20% 0.9%		3.58 1.79	2.7% 1.4%		2.82 1.31	2.2% 1.0%
191   192	8	2.33	1.8%	-	0.90	0.7%		1.98	1.5%
133	ā	2.34	1.8%		1.82	1.4%		2.22	1.7%
134	4	1.18	0.9%		1.84	1.4%		1.34	1.0%
135	6	1.78	1.3%	3	2.77	2.1%		2.03	1.5%
136	5	1.50	1.1%		0.00	0.0%		1.13	0.8%
137	5	1.51	1.1%	-	0.94	0.7%		1.37	1.0%
138   139	4 5	1.22 1.53	0.0%		0.00	0.0% 1.4%		0.92 1.62	0.7% 1.2%
140	7	2.18	1.5%		2.88	2.1%		2.33	1.7%
141	9	2.80	2.0%	,	0.00	0.0%		2.12	1.5%
142	4	1.25	0.9%		0.97	0.7%		1.15	0 0%
143	4	1.26	0.9%	•	0.00	0.0%		0.95	0,7%
144	2	0.63	0.4%		0,00	0.0%		0.48	0 3%
145	S	1.60	1.1%		0.00	0.0%		1.21 0.24	0.6%
146   147	1 2	0.32 0.65	0.4%		0.00	0.0%		0.49	0.2%
148	â	0.98	0.7%		1.01	0.7%		0.99	0.7%
149	-	0.00	0.0%		0.00	0.0%	-	0.00	0.0%
150	1	0.33	0.2%	)	0.00	0.0%	-	0.25	0.2%
151		0.00	0.0%	•	0.00	0.0%		0.00	0.0%
152		0.00	0.0%		0.00	0.0%		0.00	0.0%
153 ]		0.00	0.0%		0.00	0.0%		0.00	0.0%
154   165	1	0.34	0.2%		0.00	0.0%		0.26 0.26	0.2% 0.2%
156		0.00	0.0%		0.00	0.0%		0.00	0.0%
157		0,00	0.0≈		0.00	0.0%		0.00	0.0%
158	1	0.35	0.2%		0.00	0.0%	1	0.26	0.2%
159		0.00	0.0%		0.00	0.0%		0.00	0.0%
160 [		0.D0	0.0%		0.00	0.0%		0.00	0.0%
161		0 00	0.0%		0.00	0.0%		0.00	0.0% 0.0%
162   163		0.00 00.0	0.0%   0.0%		0.00	0.0%		0.00	0.0%
164		0.00	0.0%		0.00	0.0%		0.00	0.0%
165 ]	\$	0.36	0.2%		0.00	0.0%		0.28	0.2%
170 ]	. 1	0.37	0.2%		0.00	0.0%	1	0.28	. 0.2%
			-d				***		100 00
1 No. }	454	121.1	75.7%		119.5	24.3%	600	120.7	100.0%
" {									
at legals			600						
as Recruits			178						
Percent			29.7%						
al Post Red	oruils		422						
Percent			70.3%						
				1	6				
				1	U				
			-						

Table 7. Carapace length measurement summary of sampled legal male red king creb captured in statistical area 638401 during the commercial king creb harvest, Norton Sound Section, Eastern Bering See, August 1—3 1992.

N	lleria wa			Old shell				Total		
Carapace   -		Ave		I	ÄYe		I	Ave		
Length   (mm)	No. Le	ngth Calc.	*		ength Calc.	*	N۵.	Langth Cata.	%   %	
,										
95   99		00.0 00.0	% 0.0 % 0.0		0.00 2.68	0.0% 2.7%		0.00 £ <b>2.</b> 0	0.0%   2°0.0	
100		0.00	0.0%		0.00	0.0%		0.00	0.0%	
101 [	1	1.40	1,4%		0.00	0.0%		0.95	0.9%	
102		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
103   104	1	1.49	1.4%		0.00	0.0%	,	0.97 0.98	0.9%	
106 [	1	1.52	1.4%		5.68	5.4%	•		2.8%	
106	1	1.54	1.4%		0.00	0.0%		1.00	0.9%	Ì
107	1	1.55	1.4%	•	0.00	0.0%		1.01	0.9%	•
108 [	_	0.00	0.0%		2.92	2.7%			0.9%	•
109   110	2	3.16 1.50	2.0% 1.4%		0.00 2.97	0.0% 2.7%			1.9% 1.9%	•
111	2	3.22	20%		0.00	0.0%			1.9%	•
112	5	6.12	7.2%		0.00	0.0%		5.28	4,7%	ĺ
113	3	4.91	4.3%		6,11	5.4%			4.7%	•
114	2	3.30	2.9%		3.08	27%			2.8%	•
115	4	5.67 6.72	5.8% 5.8%		3.11 0.00	2.7% 0.0%			4.7% 3.8%	
117	2	3.39	2.0%		0.00	0.0%			1.9%	
115	5	8.55	7.2%		3.19	2.7%			5.7%	
119	4	6.90	5.8%	•	16.08	13.5%			8.5%	
120	1	1.74	1.4%		6.49	5.4%			2.8% 2.8%	•
121 ( 122	2	3.51 3.54	2.9% 2.9%		3.27 9.89	2.7% 8.1%			4.7%	
123	. 4	7.13	5.8%	, -	3.32	2.7%			4.7%	
124	1	1.80	1.4%	İ	0,00	0.0%			0.9%	
(25)	3	\$.43	4.9%		0.00	0.0%			2.8%	
126	2	3.65	2.9%	-	3.41 0.00	2.7% 0.0%			2.8% 0.9%	
127	2	1.64 3.71	1.4% 2.9%	2	6.92	5.4%			3.8%	
129	-	0.00	0.0%	, 2	6.97	5.4%			1.9%	,
130 j	2	\$.77	2.9%		3.51	2.7%			2.8%	•
131	1	1.90	1.4%	•	7.08	5.4%			2.8%	
132	1	1.91	1.4%	-	0.00 3.59	0.0% 2.7%			% €.0 %	
133   134	2	3.88	2,9%	•	0.00	0.0%			1.9%	
135	-	0.00	0.0%	-	0.00	0.0%	•		0.0%	-
136		0.00	0.0%	j 1	3.68	2.7%			0 D &	ì
137	2	3.97	2.9%		0.00	0.0%			1.9%	
138		0.00	0.0%		0.00	0.0%			0.0% 0.0%	•
139   140	1	0.00 2.03	0.0% 1.4%		3.78	2.7%			1.9%	•
141	•	0.00	0.0%		0.00	0.0%			0.0%	
142	1	2.06	1.4%		0.00	0.0%	i v	1.34	0.9%	į
143 ]		0.00	0.0%		0.00	0.0%			0.0%	
144	1	2.09	1.4% 0.0%		3.59 3.92	2.7% 2.7%			1.9%	
145   146		0.00	0.0%		0.00	0.0%			0.0%	•
147		0.00	0.0%	•	0.00	0.0%			00%	
148 )		0.00	0.0%	j 1	4.00	2.7%			0.9%	
149 }		00,0	0.0%	•	0.00	0.0%			0.0%	•
150		0.00	0.0%	•	4.05	2.7%	•		0.9%	•
151   152		0.00	0.0% 0.0%	:	0.00	0.0%	•		0.0% 0.0%	
153		0.00	0.0%		0.00	0.0%			0.0%	
154		0.00	0.0%		0.00	0.0%			0.0%	
155		0.00	<b>₽</b> 0.0	1	0.00	0.0%			0.0%	
156		0.00	0.0%		0.00	0.0%			0.0%	
157   158 }		0.00	0.0% 0.0%	-	0.00	0.0%			0.0%	•
158 (		0.00	0.0%	•	0.00	0.0%			0.0%	,
160 )		0.00	0.0%		0.00	0.0%			0.0%	:
161		0.00	0.0%		0.00	0.0%			0.0%	-
182		0.00	0.0%	•	0.00	0.0%			0.0%	•
163		0.00	0.0%	-	0.00	0.0%			0.0%	7
164   165		0.00	0.0% 0.0%		0.00 0.00	0.0%			0.0%	•
		5.00	U.U A	<u>'</u>	5.00	V.V M		3.00	J,U 38	
Total No. 1	69		65.1%			34.9%	106		100.0%	
Mean		119.6		!	123.5			120.9		j
Total legals			106	1						
			100							
Total Recruits			25							
			23.6%							
Percent			23.0%							
	2ħU		81							

Table 8. Carapace length measurement summary of sampled legal male red king crab captured in statistical area 656330 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1–3 1992.

	lew shel	1		Old shell				Total		
Carapace	N= 1	Ave		١.,.	Ave		l	Ave	1	
Length ( (mm)	NO. L	ength Calc.	%	No. t	.ength Catc.	%	No.	Length Calc.	% I	
98   99		0.00	0.0%	!	0.00	0.0%	,	0.00	0.0%	
100		0.00	0.0% 0.0%		0.00	0.0%		0.00	0.0%   0.0%	
101		0,00	0.0%		0.00	0.0%		0.00	0.0%	
102 j		0.00	0.0%	İ	0.00	0.0%	j (	0.00	0.0%	
103		0.00	0.0%	l	0.00	0.0%		0.00	0.0%	
104   105 }	1	0.76 0:77	0.7% 0.7%		0.00	0.0% 0.0%		0.58 0.59	0.6%	
106	1	0.77	0.7%		0.00	0.0%		0.59 0.80	0.6%   0.8%	
107	4	3.12	2.9%	1	2.61	2.4%	,		2.8%	
108	1	0.79	0.7%	.2	5.27	4.9%		1.82	1.7%	
109	1	0.80	0.7%	1	2.66	2.4%		1.22	1,1%	
110   111	3 3	2.41 2.43	2.2% 2.2%	1	2.68 2.71	2.4% 2.4%		1 2.47 1 2.49	2.2%   2.2%	
112	2	1.54	1.5%	'	0.00	0.0%		1.26	1.1%	
113	5	4.12	3.5%		0.00	0.0%			2.6%	
114	3	2.50	2.2%	2	5.56	4.9%		3.20	2.8%	
115	2	1.68	1.5%	_	0.00	0.0%		1.29	1.1% [	
116   117	3 3	2.54 2.56	2.2%	2	5.65 0.00	4.9% 0.0%			2.8%   1.7%	
118	3	2.58	2.2%	2	5.76	4.9%			2.8%	
119	3	2.51	2.2%	_	0.00	0.0%			1.7%	
120	5	5.26	4.4%	1	2.93	2.4%		4.72	3.9%	
121	8 5	5.30	4.4%	<b>1</b>	2.95	2.4%			3.9%   3.4%	
122   123	5	4.45 4.49	3.8% 3.6%		2.98 9.00	2.4% 7.3%			4.5%	
124	. 3	2.72	2.2%		8.05	4.9%			2.8%	
125	4	3.65	2.9%		0.00	0.0%		2.81	2.2%	
126	3	2.76	2.2%	1	3.07	2.4%		2.83	2.2%	
127 128	5 3	4.64 2.80	3.6% 2.2%	2	0.00 8.24	0.0% 4.9%		5 3.57 5 3.60	2.8%   2.8%	
129	4	3.77	2.9%		3.15	2.4%			2.8%	
130	i	0.95	0.7%	i i	3.17	2.4%			1.1%	
131	6	<b>5</b> .74	4.4%		6.39	4.9%		5.89	4,5%	
132	5	4.82	3.6%		3.22	2.4%		3 4.45	3.4%	
133   134	1	0.97 0.98	0.7% 0.7%	1	3.24 0.00	2.4% 0.0%		1.49	1.1%   0.6%	
135	2	1.97	1.5%	1	3.29	2.4%		3 2.28	1.7%	
136	2	1.99	1.5%		3.32	2.4%		3 2.29	1.7%	
137	2	2.00	1.5%		0,00	0.0%		1.54	1.1%	
138	2	2.01	1.5%		0.00	0.0%		1.55	1.1%	
139 Į 140 Į	2	2.03 2.04	1.5%		0.00	0.0%		2 1.56 2 1.57	1.1%   1.1%	
141	2	2.06	1.5%	i	0.03	0.0%		1.56	1.1%	
142 j	2	2.07	1,5%		0.00	0.0%	: ا	2 1.60	1.1% ]	
143	2	2.09	1.5%		3.49	2.4%		3 2.41	1,7% [	
144	2 3	2.10 3.18	1.5% 2.2%	1	3.51 5.54	2.4% 2.4%		3 2.43 4 3.26	1.7%   2.2%	
146	2	2.13	1.5%	·	0.00	0.0%		1.64	1.1%	
147	2	2.15	1.5%	1	3.59	2.4%		2.48	1.7%	
148	3	3.24	2.2%	3	10.83	7.3%		4.99	3.4%	
149 [	2	2.18	1.5%	1	3.83	2.4%		3 2.51	1.7% [	
150 } 151	1 3	1.09 3.31	0.7% 2.2%	1	0.00 3.65	0.0% 2.4%		0.84 4 3.39	0. <b>6%</b>   2.2%	
152	1	1.11	0.7%	•	3.71	2.4%		2 1.71	1.1%	
153	1	1.12	0.7%		0.00	0.0%	•	0.88	0.6%	
154	1	1.12	0.7%		0,00	0.0%	:	0.87	0.6%	
155		0.00	0.0%		0.00	0.0%	:	0.00	0.0% [	
156   157		0.00	0.0%		0.00	0.0%		0.00	0.0%	
158		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
159 j		0.00	0.0%		0.00	0.0%	j (	0.00	0.0%	
160		0.00	0.0%		0.00	0.0%		0.00	0.0%	
181		0.00	0.0%		0.00 0.00	0.0%		0.00	0.0%   0.0%	
162   163		0.00	0.0%		0.00	0.0%		0.00	0.0%	
164	1	1.20	0.7%		0.00	0.0%		0.92	o e% j	
165 j		0.00	0.0%	l	0.00	0.0%	(	0.∞	0.0%	
ntal No. 1	127		77 MW	) 41		23.0%	178	<del>-</del>	100 0%	
'otal No. ] Mean [	137	127.5	77.0%	41 	127.8	23.0%	170	127.8	10000 J	
		- 21 /4		i	,				,	
otal legels			178	-						
(Nai Bassus			27							
otai Recruits Percent			27 15.2%							
otal Post Rec	ruits		151							
Percent			84.8%							

Table 9. Carapace length measurement aunimary of sampled legal male red king crab captured in statistical area 656330 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1 – 3 1992.

	ew shell			Old shell				Total		
Carapace   Length	No. Le	Ave	1	No. I	AVA		   No.	Ave Length	!	
(ww) j	NO. LA	engun Calc.	<b>4</b>	NO. L	ength Calc.	*	•	Calc	*	
98   99		0.00	0.0%		0.00	0.0% 0.0%		0.00	0.0% j 0.0% j	
100 1		0.00	0.0%		0.00	0.0%		0.00	0.0%	
101		0.00	0.0%		0.00	0.0%		0.00	0.0%	
102		0.00	0.0%		0.00	0.0%	j o	0,00	0.0%	
103		0.00	0.0%		0.00	0.0%		0.00	0.0% {	
104 1	1	2.48	2.4% [		0.00	0.0%		1.65	1.6%	
105 f	7	0.00 2.52	0.0% [ 2.4% [		0.00	0.0%		0.00	0.0% ) 1.6% )	
107	1	2.55	2.4%		0.00	0.0%		1.70	1.6% }	
108	3	7.71	7.1%	3	15,43	14.3%		10.29	9.5%	
109	1	2.50	2.4%		0.00	0.0%		11.73	1.6%	
110 }	2	5,24	4.8%	1	5.24	4.8%	•	5.24	4.8% ]	
111	1	2.64 2.67	2.4%	1	5.29 5.33	4.8% 4.8%		3.52 3.56	3.2%   3.2%	
112   118	3	8.07	2.4% { 7.1% }	1	0.00	0.0%	•	5.38	4.8%	
114	1	2.75	2.4%	1	5.43	4.8%	•	3.62	3.2%	
115	2	5.48	4.8%	1	5.48	4.8%	•	5.48	4.8%	
116		0.00	0.0%	1	5.52	4.8%		1.84	1.6%	
117	_	0.00	0.0% }		0.00	0.0%		0.00	0.0% )	
118	2	5.62 0.00	4.8%		0.00	0.0%		3.75 0.00	3.2%   0.0%	
119   120	4	11.43	0.0%   9.5%		0.00	0.0%	•	7.62	6.3%	
121	9	8.64	7.1%	2	17.29	14.3%		11.52	9.5%	
122	1	2.90	2.4%	1	5.81	4.8%	j 2	3.87	3.2%	
123	2	5.88	4.8%		0.00	0.0%		3.90	3.2%	
124	2	5.90	4.8%	- 1	5.90 11_90	4.8%	•	5.90	4.8% ]	
125   126	1	2.98 3.00	2.4%	2	0.00	9.5% 0.0%		5.95 2.00	4.8%   1.6%	
127	2	6.05	4.8%	1	6.05	4.8%	•	6.05	4.8%	
128	_	0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
129		0.00	0.0%	1	6.14	4.8%		2.05	1.8%	
130 }	1	3.10	2.4%	1	6.19	4.8%		4.13	9,2% ]	
131 }	3	9.38	7.1%		0.00	0.0%	-	6.24	4.8% }	
132 <b> </b> 133 <b> </b>	1	3.14 0.00	0.0%		0.00	0.0%	•	2.10 0.00	1,6%   0.0%	
134	1	3.19	2.4%		0.00	0.0%	•	2.13	1.6%	
135		0.00	0.0%		0.00	0.0%		0.00	0.0%	
138 [		0.00	0.0%	2	12.95	9.5%		4.32	3.2%	
137		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
138	1	3.29	2.4% [		0.00	0.0%		2.19 0.00	1.6%	
139 { 140 }		0.00	0.0% {		0,00	0.0% 0.0%		0.00	0.0%	
1411		0.00	0.0%	•	0.00	0.0%		0.00	0.0%	
142 \$		0.00	0.0%		0.00	0.0%	1 0	0.00	0.0%	
143 {		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
144 ]		0.00	0.0%		0.00	0.0%		0.00	0.0%	
145		0.00	0.0%		0.00	0.0%		0.00	0.0%	
146 } 147		0.00	0.0%		0.00	0.0% 0.0%		0.00 0.00	0.0%	
148 (		0.00	0.0%		0.00	0.0%	•	0.00	0.0%	
149		0.00	0.0%		0.00	0.0%		0.00	0.0%	
150		0.00	0.0%		0.00	0.0%	j 0	0.00	0.0%	
151		0.00	0.0%		0.00				0.0%	
152		0.00	0.0%		0.00	0.0%			0.0%	
153   154		0.00	0.0%   0.0%		0.00				0.0%	
154		0.00	0.0%		0,00		•		0.0%	
158		0.00	0.0%		0,00		•		0.0%	
167		0.00	0.0%		0,00	0.0%	0		0.0%	
158 [		0.00	0.0%		0.00				0.0%	
159   160		0.00	0.0%		0.00				0.0%	
160   161		0.00	0.0%		0.00				0.0%   0.0%	
162 }		0.00	0.0%		ŏ.œ				0.0%	
163		0.00	0.0%		0.00		•	0.00	0.0%	
164		0.00	0.0%		0.00		•	0.00	0.0% ]	
165		0.00	0.0%		0.00	0.0%	١ ٥	0.00	0.0% }	
Total No. 1	40		66 2m 1			222~			100.00	
Total No.   Mean	42	119,1	66.7%	21.	119.9	33,3%	63	119.3	100.0%	
		r car. I	 		118.8			119.3	. 1	
			63							
Talal legals										
į										
Talal legals  Total Recruits			17							
Talal legals			17 27.0%						•	
Talai legals  Tolai Recruits	dia.								•	

Table 10. Percent of newly recruited male king crab by statistical area, Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

	Statistical Area	# Crab	%Recruits	Range of % Recruits	# of vessel days sampled
	656401	853	31%	22-42%	, 4
	666401	600	30%	11 -46%	3
	636401	106	23%	14-28%	2
	656330	178	15%	6-26%	1
	666330	63	27%	27%	1
Total		1800 *	28%	6-46%	11

<sup>\*</sup> total number of crab does not equal the same total number of legal crab in Table 4 because some length frequency forms had no statistical area information recorded.

Table 11. Carepose length measurement summary of Prenatral, Asonal, and Postreorus habs end lung orab, captured during the account of language and harvest, Nation Sound Section, Eastern Nation Language 1. 4. (2015).

	PREMECAUT		RECAUIT			POSTA	CRUIT		TOTALE		
LTIL	(Subden) Jan.	pa)   F#NEQ.   %.	WT. Ma	Ma.	FREG. 1	Ma.	Mo.	FREQ.	No.	FREQ.	
52)	2	0.04% [	0		0.00%	۵		0,00%	2	004% [	
56   56   57	0	0.00%	0		0.00%	8		0.00%	ů	0.00%	
52 j 52 j	1	0.00%	٥		0.00%	٥		0.00% (	0	0.02% [	
54 i	1	0.00-% i	ŏ		0.00%	ă		0.00%	1	0.04%	
80 E	2	0.00%   0.00%	٥		0.00%	0		0.00%	0	0.00%	
81   82   83   84   85   85   85   85   85   85   85	3 5	0.07%	0		0.00%   0.00%   0.00%   0.00%	a		0.00%	3	0.07% [	
64	2 7	0.04%	ě		0.00%	0		0.00%	5 2 7	0.04%	
65 (	3	0.16%	٥		0.0096.1	0		0.00%	3	0.07%	
67 ( 58 )	8	0.13%	0		0.00%	٥		0.00%	8	0.13% (	
56 70	9	0.20%	٥		0.00%   0.00%	9		0.00%	9	0.20%	
71	11	0.25%	ő		0.00%	ő		0.00%	- 11	0.25%	
ומ	12	0.16%	0		0.00%	0		0.00% 0.00%	12	0.16%	
76	7	0.16%	0		0.00%	0		0.00% 0.00%		0.18%	
76	é	0.18%	ŏ		0.00%	ŏ		0.00%	7	0.18%	
76 97 78	10	0.2%	0		0.00% 0.00%	•		0.00%	12	0.27% 0.27% 0.25%	
79 80	11	0.23%	0		0.00%	0		0.00% 0.00% 0.00% 0.00%	11	0.25%	
st	11	0.25%	٥		0.00% 0.00% 0.00% 0.00% 0.00%	٥		0.00%	11	0.25%	
		0.45%	0		0.00% 0.00%			0.00%	20   15	0.33%	
94 80	23	0.51%	0		0.00%	0		0.00%	23	0.38%	
Det	15	0.33%	ě		0.00% 0.00% 0.00%	0		0.00%	1.5 1.5	0.33%	
67 68 80	15				0.00%	8		0.00%	19	4.42%	
80	26 18	0.38%	000000000000000000000000000000000000000		0.00%			0.00%	1 16	0.56%	
		0.35%			0.00% 0.00%	0		0.00%	21	0.36%	
92 93	17	0.36%	0		0.00%	. 4		A COSE	1 17	APRIL 0	
94	1 16	0.36%	0		0.00% 0.00%	0		6,00% 6,00% 6,00%	14	0.36% 0.40% 0.48%	
96	22	0,49%	0		0.00%	9		0.00%	22	0.38%	
98	j ao	0.45%	ة		0.00%	ŏ		0.00%	20	0.45%	
B9 103	22   26   15	ಯನ್ನ	2   5	7	a ton	1 2	1	0.02% 0.00%	1 31	0.56% 0.68%	
101	15   23	0.33%		8 12	0.20%	1 0	2	0.00%	24	0.54%	
100	j 11	0.25%	33	22	0.74%	i	4	4		1.17%	
104	12   5	0.27%	30   84   59	20 42	1,42%	201	17	0.30% 0.57% 0.34% 0.34% 0.34%	94   78	2.10%	
108	2 3	0.04%	549   822	39 54 52	1,22%	15	10 10	0.34% #MC.0	76   100	1,70% 2,23%	
108	i ,	0.00%	80	51	1,79%	29	19 18	0.64%	109	243%	
110	;	0.02%	ì es	63	213%	) 39	26	0.61%	136	3.00%	
111 112	!	0.00%	86   514	57 73	1.02%	1 42	29 37	0.95%	מזו ו	2.87% 3.78%	
112 112 114	į.		92	61 73	2.06%	1 44	29 39	0.98%	1 136	1.06% 3.62%	
115	!	0.00%	1 145	98	2.53% 3.24% 0.00%	50 70	46	1.56%	215	4 90%	
116	!	0.00%	0		0.00%	130	62 86	2.90% 2.77%	130	2.90% 2.77% 4.05%	
117 118	į	0.00%	0		0.00%	182	120	4.00%	1 192	4.05% 2.70%	
120	}	0.00%	. 0		0.00% 0.00% 0.00% 0.00%	180	119	4,02%	180	4.02%	
121	i	0.00%	0		0.00%	1 153	101	2.17%	153	217% 241%	
123	į	0.00% 0.00%	į o		0.00%	1 115	78 67	2.57% 2.26%	115	2.57% 2.26%	
125	i	0.00%	١ ٥		0.00%	100	71	2.40%	1 t09	240%	
120	}	0.00%	0		0.00%	80	55 80	1.95% 2.00%	91	1.86% 2.03%	
129 129	į	0.00%	0		0.00%	( 66	45	1.52%	68	1.52%	
130		0.00%	) 0		0.00%	1 41	40	1.35%	j 61	1.35%	
137 132	i	0.00%	1 0		0.00%	H 64	45 42	1,02% 1,42%	64	1,52%	
133	í .	0.00%	j 0		0.00%	47	31 29	1.05%	) 47	1.03% 0.95%	
135	4	0.00%	1 0		0.00%	39	20	0.88%	j 39	0.86%	
135	i	0.00%	1 0		0.00%	32	28 21	0.95% 0.71%	32	0.95% 0.71%	
138 139	i	0.00%	i o		0.00%	29	19	0.46%	29	0.64%	
140	ı	0.00%	į o		0.00%	1 35	23	0,78%	j 35	0.78%	
541 142	i	0.00%	1 0		0.00%	26	17 17	0.57% 0.57%	26	0.57% 0.57%	
143	!	0.00% 0.00%	i 0		0.00%	1 16	12 11	0.41%	18	0.41% 0.37%	
145	i	0.00%	ì o		0.00%	1 24	Ιđ	0.54%	i ×	0.54%	
145	Ĺ	0.00%	1 0		4.00%	9		0.20%	9	0.14%	
148		0.00% 0.00%	1 0		0.00% 0.00%		12	0.17%		041%	
150	ĺ	0.00%	i o		0.00%	( )	7	0.07%	) 3	0.07%	
151 152	ì	0.00%	1 0		0.00% 0.00%	1 5	5 3	0.20%	1 5	0.20% 0.10%	
154	1	0.00%	} 0		0.00%	1 2	1	0.02%	1 2	0.00%	
155	1	0.00%	1 0		0.00%	1 2	1	0.03%	1 2	0.00%	
158	1	0.00%	10		0.00%	0		0.00%	0	0.004	
150 150	ı	0.00%	1 0		0.00%	] 2	- 1	0.03%	1 2	0.03%	
180	i	0.00% 0.00%	1 0		0.00%	0		0.00% 0.00%	1 0	0.00%	
161		0.00% 0.00%			0.00% 0.00%			0.00%		0.004 0.00%	
163	1	0.00%	0		0.00%	i o		0.00%	0	0.00%	
165	Ì	0.00%			0.00%	1 2	5	0.07%	2	0.07% 0.00%	
סלו		0.00%	-	-	0.00%		1	0.03%		0.03%	
Total	566	13.34%	1105	730	34.00%	2780	1606	62.01%	4484	100.00%	

Table 12. Observer summary table of legal red King crab weight samples by statistical area, Norton Sound Section, Eastern Bering Sea, August 1–3, 1992.

	Statistical Area	# Crab	Weight lbs.	Average Weight (lbs.)	Range of Ave. wts. (lbs.)	# vessel days*	
	656401	178	542.2	3.1	2.8-3.1	3	
	666401	155	465.2	3.0	2.4 - 3.7	3	
	636401	100	290.5	2.9	2.6 - 3.2	3	
	65633 <b>0</b>	30	88.5	2.9	2.9	1	
Total		463	1386.4	3.0	2.4-3.7	10	

<sup>\*</sup> Total number of days sampled for weights by observer vessels.

Table 13. Carapace length measurement summary of sampled sublegal male red king crab captured during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 4-3, 1992.

Carapace		Ν	lew Shell	1		Old Shell	1		Total	į
Length	-		Ave	1		Ave	ļ		Ave Length	
(ឃឃ)	   No.		Length Calc	/ %	Na.	Length Calc	% I	No.	Calc	%
	1 (40,		Cac	~ [	140.	000	,- 1			
52	I	١	0.10	0.2%	í	0.93	1.8%	•	0.17	0.3%
56	i	1	0.10	0.2%		0.00	0,0%		60.0	0.2%
57	ļ	i	0.11	0.2%		0.00	0.0% [		0.10	0.2%
58	}		0.00	0.0%		0.00	0.0%		0.00	0.0%
59		١	0.11	0.2% }		0.00	0.0%		0.10	0.2%
50		2	0.22	0.4%		0.00	0.0%		0.26	0.3%
81	•		0.00	0.0%		0.00	0.0%		0.00	0.0%
52	•	3	0.34	0.5%		0.00	0.0%		0.31	0.5%
53	•	5	0.58	0.8%		0.00	0.0%		0.53	0.8%
64		2	0.24	0.4%		0.00	0.0%		0.21	0.3% 1.2%
65	-	7	0.84	1.3%		0.00	0.0%	•	0.75 0.33	0.5%
86	•	3	0.37	0.8%		0.00	0.0%	•	0.33	1.3%
67	•	8	0.99	1.5%		0.00	0.0%			1.0%
68		8	0.75	1.1%	•	0.00	0.0%		0.68 1.04	1.5%
69	•	8	1.02	1.5%		1.23 0.00	1.8% 0.0%		0.35	0.5%
70	,	3	0.39	0.5%   2.0%		0.00	0.0%	!	1.31	1.8%
71	•	11	1.44	2.0% 0. <b>9</b> %	•		3.6%	•	0.84	1.2%
72	•	5	0.66 1.62	2.2%		0.00	0.0%	•	1.46	2.0%
73 74	•	12 7	0.96	1.3%			1.8%	•	0.99	1.3%
74 75	•	5	0.69	0.9%			3.6%	•	0.88	1.2%
78	-	6	0.84	1.1%	•		3.6%	•	1.02	1,3%
77	•	10	1.42	1.8%	,	0.00	0.0%	•	1.29	1.7%
78	•	11	1.58	2.0%	:		1.8%		1.57	2.0%
79	•	9	1.31	1.7%	•		3.6%	1 11	1.45	1.8%
80		10	1.48	1.8%	•	0.00	0.0%	10	1.34	1.7%
81		11	1.64	2.0%	ĺ	0.00	0.0%	<b>11</b>	1.49	1.8%
82	1	18	2,72	3.3%	1 2	2.93	3.6%	20	2.74	3.3%
83	•	12	1.84	2.2%	į :	4.45	5.4%	15	2.08	2.5%
84	i i	22	9.41	4.1%	1	1.50	1.8%	23	3.23	3.8%
85	1	15	2.35	2.8%	2	3.04	3.6%	17	2.42	2.8%
86	1	15	2.38	2.8%	1	0.00	0.0%	15	2.16	2.5%
87	1	14	2.25	2.6%	1			-	2.18	2.5%
88	Ţ	18	2.92	3.3%	1 1	1.57		7	2.80	3.2%
89	) J	24	3.94	4.4%	•			-	3.87	4.9%
80	1	15	2.49	2.8%	•			•	2,41	2.7%
91		19	3.19	3.5%					3.20	3.5%
92	•	16	2.72	3.0%	-	0.00		•	2.46	2.7%
93	*	16	2.75	3.0%	•	1.66		7	2.64	2.8%
94	•	16	2.77	3.0%		0.00		1	2.52	2.7%
95	•	21	3.68	3.9%	:	1.70		•	3.49	3.7%
96	-	20	3.54	3.7%	-			-	3.53	3.7%
	Ţ	14		2.6%	:	5.20				
98		18	3.25	3.3%				•		3.3% 3.7%
99		19		3.5%	-	5.30		:	_	4 3%
100	-	22	4.06	4.1%		7.14				
101	•	14	2,61 3.39	2.6%		1.80 5 9.11		:		3.8%
102 103	•	18	1,71	3.3% 1.7%					1.89	1.8%
	•		1.54	1.5%	•			7	2.09	2.0%
104 105		8 5		0.9%		0.00				0.8%
105		2		0.4%	•	0.00				0.3%
100	:	2		0.4%		1.91		7		0.5%
102	-	2	0.00	0.0%	:	0.00		-	0.00	0.0%
109	•	1	. 0.20	0.2%	:	0.00		:		0.2%
110	•	1		0.2%		0.00		-	0.18	0.2%
111		'	0.20	0.0%		0.00		-	0.00	0.0%
112	•		0.00	0.0%		Ø.00		•	0.00	0.0%
113			0.00	0.0%	•	0.00			0.00	0.0%
	'		5.00	0.070	'	0.00	5,0,0	, ,	0.00	2.070
um -	9	42		90.6%	1 58	i	9.4%	598		100.0%
lean			87 4		i	90.6			87.7	
					-					

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Table 14. Carapace length measurement summary of sampled sublegal male red king crab captured in statistical area 656401 during the commercial king crab harvest. Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

Carapace		New Shell	!	(	old Shell	Ī		Total	
Length (		Ave	!		Ave			Ave	
(mm) {		Length	!		Length			Length	
ı	No.	Calc	%	No.	Calc	%	No.	Calc	9
58	1	0.31	0.6%	0	0.00	0.0% }	1	0.27	0.5%
57	1	0.31	0.6%	0	0.00	0.0%	1	0.28	0.5%
58		0.00	0.0%	0	0.00	0.0% }	0	0.00	0.0%
59	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%
60	٥	0.00	0.0%	0	0.00	0.0%	٥	0.00	0.0%
81	0	0.00	0.0% }	0	0.00	0.0%	0	0.00	0.09
62 {		0.00	0.0%	0	0.00	0.0%	0	0.00	0.09
63 j	0	0.00	0.0%	٥	0.00	0.0%	0	ზ.00	0.09
54 ]	1	0.35	0.6%	0	0.00	0.0%	. (	0.31	0.59
85		0.38	0.5%	0	0.00	0.0%	1	0.32	0.59
88 (	1	0.36	0.8%	0	0.00	0.0% ]		0.32	0.59
87 (	4	1,48	2.2%	0	0.00	0.6% ]	4	1.31	2.09
66	1	0.38	0.6%	0	0.00	0.0% {		0.33	0.59
69	1	0.38	0.5%	0	0.00	0.0% {		0.34	0.59
70	٥	0.00	0.0%	0	0.00	0.0% ]		0.00	0.09
71 [	1	0.39	0.6%	0	0.00	0.0%	1	0.35	0.5%
72	1	0.40	0.5%	0	0.00	0.0%	1	0.35	0.5%
73	1	0.40	0.6%	0	0.00	0.0%	1	0.36	0.59
74	1	0.41	0.6%	1	3.22	4.3%	2	0.73	1.09
75	0	0.00	0.0%		3.26	4.3%		0.37	0.59
76	٥	0.00	0.0%		0.00	0.0% [	0	0.00	0.09
77		0.85	1.1%	0	0.00	0.0% j		0.75	1.09
78	8	2.59	3.5%		0.00	0.0% }		2,29	2.99
79		0.87	1.1%		0.00	0.0% {		0.77	1.09
80 (		0.44	0.8%		0.00	0.0%		0.39	0.59
85 [		0.90	1.1%		0.00 0.00	0.0%		0.79	1.09
82   83 }		4.53 1.83	5.5% [		0.00	0.0%		4.02	4.99
84		1.86	2.2%		0.00	0.0%   0.0%		1.63 1.65	2.0%
85 (		1.41	2.2%   1.7%		3.70	4.3%		1.63	2.09
86 ]		3.33	3.9%		0.00	0.0%		2.95	3.49
87 )		1,44	17%		0.00	0.0%		1.28	1.59
86		1.94	2.2%		3.83	4.3%		2.16	2.59
89		4,43	5.0% [		3.87	4.3%		4.36	4.99
90 }		3.46	3.9%		3.91	4.3%		3,53	3,99
91 )		4.02	4.4%		3.96	4.3%		4.01	4.49
92		3.56	3.9%		0.00	0.0%		3.16	3.49
93 (		5.14	5,5%		4.04	4.3%		5.01	5.45
94		3.12	3.3%		0.00	0.0%		2.78	2.95
95 (		5.25	5.5%	1	4,13	4.3%		5.12	5.49
96		4.24	4.4%		0.00	0.0%		3.76	3.99
97		2.14	2.2%		4.22	4.3%		2.38	2.59
98 [	5	2.71	2.8%		0.00	0.0%	5	2.40	2.59
99 }		4,92	5.0%		4.30	4.3%	10	4.85	4.99
100	12	6.63	6.6%	0	0.00	0.0%	12	5.88	5.99
101 }	3	1.67	1 7%	1	4.39	4.3%	4	1.98	2.09
102 {	6	3.38	3.3%	6	26.51	26.1%	12	6.00	5.99
103 }	5	2.85	2.8%	2	8.96	8.7% (	7	3.53	3.49
104		2.87	2.8%	3	13.57	13.0%		4.08	3.99
105 [	2	1.16	11%	0	0.00	0.0% {	2	1.03	1.09
106		0.00	0.0%		0.00	0.0% }		0.00	0.09
107		0.00	0,0%	0	0.00	0.0%		0 00	0 09
108	٥	0.00	0.0%	0	0.00	0.0% }		0.00	0.09
109 [		0.60	0.6%		0.00	0.0%		0.53	0.59
110 [		0.61	0.8%		0.00	0.0%		0.54	0.59
111		0.00	0.0%		0.00	0.0%		0.00	0.09
112		0.00	0.0%		0.00	0.0%		0 00	0 09
113	0	0.00	0.0%	0	0.00	0.0%	٥	0.00	0.09
									100.00
ישת	181		88.7%		00.5	11.3%	204	^^^	100.09
ean		90.3	J		96.0			90.9	

Table 15. Carapace length measurement summary of sampled sublegal male red king crab captured in statistical area 686401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

Carapace		New Shell	1	(	Old Shell	Į		Total Ave	
Length		Ave	. !		Ava Length	1		Length	
(mm)   	No.	Length Calc	ا %	No.	Calc	%	No.	Calc	%
52	1	0.21	0.4%	1	1.93	3.7%	2	0.38	0.7%
57	0	0.00	0.0%	٥	0.00	0.0%	٥	0.00	0.0%
58	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%
59	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0,0%
60	0	0.00	0.0%		0.00	0.0%	0	0.00	0.0%
61 [	0	0.00	0.0%	*	0.00	0.0%	٥	0.00	0.0%
62	1	0.25	0.4%		0.00	0.0%	1	,0.23	0.4% 0.4%
63	1	0.26	0.4%		0.00	0.0%	1	0.2 <b>3</b> 0.24	0.4%
64	1	0.28	0.4%		0.00 0.00	0.0%   0.0%	3	0.72	1.1%
65 }		0.80 0.27	1.2%   0.4%		0.00	0.0%	1	0.24	0,4%
66   67		0.55	0.8%		0.00	0.0%	2	0.49	0.7%
68		0.28	0.4%		2.52	3.7%	2	0.50	0.7%
69		0.85	1.2%		2,56	3.7%	4	1.02	1.5%
70		0.00	0.0%		0.00	0.0%	0	0.00	0.0%
71		0.58	0.8%		0,00	0.0%	2	0.52	0.7%
72		0.00	0.0%	2	5.33	7.4%	2	0.53	0.7%
73 {	3	0.90	1.2%	0	0.00	0.0%	3	0.81	1,1%
74	1	0.30	0.4%	0	0.00	0.0%		0.27	0.4%
75		1.23	1.6%	•	2.78	3.7%		1.38	1.8%
76	4	. 1.25	1.6%		5.63	7.4%		1.68	2.2%
77 (			2.5%		0,00	0.0%		1.70	2.29
78	•		1.6%	•	2.89	3.7%		1.44	1.8%
79			1.6%		5.85	7.4%		1.75 1.77	2.2%
80			2.5%	-	0.00	0.0%   0.0%		2.69	3.3%
81	-		3.7%		0.00 <b>6</b> .0 <b>7</b>	7.4%		2.12	2.69
82 83			2.0% 2.9%		9,22	11.1%		3.05	3.79
84	•		7.0%	-	3.11	3.7%		5.58	5.69
85	•		4.1%	•	3.15	3.7%		3.45	4,19
86	•		2.9%		0.00	0.0%		2.22	2.69
87	•		2.5%	•	3.22	3.7%		2.25	2.69
88	•		4.5%		0.00	0.0%	11	3.57	4,19
89	-		5.7%	j 0	0.00	0.0%	14	4.60	5.29
90	1 7	2.58	2.9%	0	0.00	0.0%	7	2.32	2.69
91	į g	3.36	3.7%	0	0.00	0.0%	9	3.02	3.39
92	1 8	3.02	3.3%	0	0.00	0.0%	8	2.72	3.09
93	4	1.52	1,6%	0	0.00	0.0%	•	1.37	1.59
94	6		2.5%	•	0.00	0.0%	•	2.08	2.29
95	•		3.3%	•	00.0	0.0%		2.80	3.09
98	•		3.7%		3.56	3.7%	•	3.54	3.79
97			2.9%		7.19	7.4%		3.22	3.39
98									4,49 3.39
99			3,3%	•		3.7% 11.1%	•	3,29 4 06	
100 101	•		3.3% 3.3%	•		0.0%	-	2.98	3.09
102			2.5%			0.0%	-	2.28	2.29
103	•		0.8%	-		0.0%		0.76	0.79
104	-		1.2%	-		0.0%		1.15	1.19
105	•		1.6%	:		0.0%		1.55	1.59
106	-		0.4%	j o	0.00	0.0%		0.39	0.49
107			0.4%	ا ه	0.00	0.0%	1	0.39	0.49
108	:	0.00	0.0%	-		0.0%	0	0 00	0.09
109	0	0.00	0.0%	1 0	0.00	0.0%		0.00	0.0%
110	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.09
111	ļ o	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%
112	-		0.0%	•		0.0%		0 00	0.09
113	0	0.00	0.0%	) 0	0.00	0.0%	0	0.00	0.09

Table 16. Carapace length measurement summary of sampled sublegal male red king crab captured in statistical area 636401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1–3, 1992. (No old shell in sample)

Carapace		New Sheli	
Length ( (mm) (		Ave	
(mm)   	No.	Length Calc	%
J	110.	<b>C</b>	~
57	0	0.00	0.0%
58	0	0,00	0.0%
59	4	3.23	5.5%
60   61	2 0	1,64 0.00	2.7% 0.0%
82	2	1.70-	2.7%
83	4	3.45	5.5%
64	0	0.00	0.0%
65	3	2.57	4.1%
66	0	0.00	0.0%
67	2	1.84	2.7%
68   69	3 4	2.79 3.78	4.1%
69   70	9	2.88	5.5%   4.1%
71	- 8	7.78	11.0%
72	4	3.95	5.5%
73 j	8	8.00	11.0%
74	4	4.05	5.5%
75	1	1.03	1,4%
76   77	2	2.08. 2.11	2.7%   2.7%
77   78	2	1.07	1.4%
79		216	2.7%
80	2 2	2.19	2.7%
81	0	0.00	0,0%
82	2	2.25	2.7%
83	1	1.14	1.4%
84 ( 85 )	1	1.15 1.16	1.4% 1.4%
86	0	0.00	0,0%
87	1	1.19	1.4%
88 j	1	1.21	1.4%
89 }	0	0.00	0.0%
90	0	0,00	0.0%
91 (	0	0.00	0.0%
92   93	0	0.00	0.0%
94	1	1.29	1.4%
95	1	1.30	1.4%
96	2	2.63	2.7%
97	0	0.00	0.0%
98	0	0.00	0.0%
99   100	0	0.00 0.00	0.0% 0.0%
101	0	0.00	0.0%
102	1	1.40	1.4%
103	Ó	0.00	0.0%
104	0	0.00	0.0%
105	0	0,00	0.0%
106	0	0.00	0:0%
107   108	0	0.00	0.0%
100	0	0.00	0.0%
110	0	0.00	0.0%
111	0	0.00	0.0%
112	0	0,00	0.0%
113	0	0.00	0.0%
sum	73		100.6%

sum 73 100.6% Mean 73.1

Total sublegals

Table 17. Carapace length measurement summary of sampled sublegal male red king crab captured in statistical area 656330 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1 – 3, 1992. (No old shell in sample)

Carapace	<u> </u>	ı	New She	lt
Length			Ave	
(mm)	<sub>N</sub> _		Length	~
	No.		Calc	%
57		0	0.00	0.0%
58	ļ	0	0.00	0.0%
59		0	0.00	0.0%
60	ļ	0	0.00	0.0%
61	ļ	0	0.00	0.0%
62 82	ļ	0	0.00	0.0%
හ 64		0	0.00	0.0% 0.0%
65		0	0.00	0.0%
66		Ö	0.00	0.0%
67		ō	0.00	0.0%
68	i	0	0.00	0.0%
69		0	0.00	0.0%
70	ĺ	0	0.00	0.0%
71		0	0.00	0.0%
72		0	0.00	0.0%
73	ļ	0	0.00	0.0%
74		0	0.00	0.0%
75 76		0	0.00 0.00.	0.0% 0.0%
76 77		0	0.00	0.0%
78		0	0.00	0.0%
79		0	0.00	0.0%
80		0	0.00	0.0%
81	į	٥	0.00	0.0%
82	ļ	0	0.00	0.0%
83		0	0.00	0.0%
84 85		0	0.00	0.0%
86		0	0.00	0.0% 0.0%
87		2	24.86	28.6%
88		0	0.00	0.0%
89	ĺ	0	0.00	0.0%
90	1	t	12.86	14.3%
91		0	0.00	0.0%
92		0	0.00	0.0%
93		0	0.00	0.0%
94 95		0	0.00	0.0% 0.0%
96		1	13.71	14.3%
97		Ö	0.00	0.0%
98		0	0.00	0.0%
99		1	14.14	14.3%
100		٥	0.00	0.0%
101		0	0.00	0.0%
102		2	29.14	28.6%
103   104		0	0.00	0.0% 0.0%
105		Õ	0.00	0.0%
106		Ö	0.00	0.0%
107		0	0.00	0.0%
108		0	0.00	0.0%
109		0	0.00	0.0%
. 110		0	0.00	0.0%
111		0	0.00	0.0%
112   113		0	0.00	0.0%
113		U	0.00	0.0%
sum Mean		7	04.7	100.0%

Mean

94.7

Table 18. Carapace length measurement and percent ovigerity summary of sampled female red king crab captured during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1–3, 1992.

		ADULT				IGERI .ow (		um	ADUL mm f		PER 9		GERIT Low (		Sum
50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 79 79 79 79 79 79 79 79 79 79 79 79	1   2   2   3   4   4   3   1   3   2   1   1   1   1   1   1   1   1   1	60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 89	2 1 1 1 3 1 1 1 1	1 1 2 1 1 1 3 2 3 1 1 1	1 1 1 1 2 2	1 2 1		0 0 0 0 0 1 1 0 0 0 1 3 3 1 3 1 3 1 2 5 1 7 4 2 2 4	91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 110 111 111 112 113 114 115 116 117 118	1 1 1 3 2 4 1 1 1 1 1 1 1	2 1 1 1 1 4 2 2 2 2 2 1 1 2 2 1	1 2 3 4 2 1	1 1		3 2 4 4 8 10 6 0 2 6 5 4 2 2 0 2 2 2 1 1 1 1 0 1 2 2 1 0 0 0 2 1
83	38	90	15	20	12	1 5	0	6       52	127   128	19	1 1 -40	15	3	0	1 1 77
	00							RITY	- <b>-</b> -	34	60	27	8	0	129
									~ -	26.3				0	
MEAN	66.8	W							9						
VAR. ;	30.9	V	ARIAN	ICE C	F TH	E MEA	N LE	NGTH	l —— 1	43.2					

Table 19. Carapace length measurement and percent ovigerity summary of sampled female red king crab captured in statistical area 656401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

Stat Area 656401 Vessel All Date 8 1 – 3 92													
JUVENILE mm no.	ADULT SIZ   mm Full									GERITY Low 0	Sum	   -	
50 51 52 53 54 55 56 57 58 1 59 60 61 62 1 63 64 3 65 1 68 1 70 71 72 73 1 74 75 1 76 77 78 79 80 80 80 80 80 80 80 80 80 80	77   78   79   80   81   82   83   84   85   86   87   88		1		000000000000000000000000000000000000000	91   92   93   94   95   96   97   98   99   100   101   102   103   104   105   106   110   111   112   113   114   115   116   117   118   119   120   121   122   122   122   122   122   122   122   122   122   124   125	1 1 2	1	1 1		1 1 2 1 0 2 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
10	11	1 1	1	0 (	) 13.		6	3	2	0	0 11		
		TOTAL	. ADUL7	S/OVI	GERITY		17	4	3	0	0 24		
		% ADL	ILTS/O\	/IGERI	TY		70.8	16.6	12.	0	0		
MEAN 66.0	MEAN 66.0 WEIGHTED MEAN ADULT LENGTH 88.5												
VAR. 25.3	VARIA	NCE O	FTHEN	MEAN	LENGTH	I 6	6.7				٠		
Fuli=90-10	VAR. 25.3 VARIANCE OF THE MEAN LENGTH 66.7												

Table 20. Carapace length measurement and percent ovigerity summary of sampled female red king crab captured in statistical area 666401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1–3, 1992.

Stat Area	666401		~	Vess	sel All			Date	81~	3 92		
JUVENILE mm no.	ADULT S   mm Full	ZE PE Hí	R % OV Med l	IGERI	TY Sum	ADUL   mm	T SIZE Full			GERI <sup>-</sup> Low		Sum
50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 1 83 1	60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 80 81 82 83 84 85 86 87 88 88 89 90	1 1 1 3 3 3 3 1 1 1 2 3 3 3 1 1 1 2 3 3 3 1 1 1 2 3 3 3 1 1 1 1	3 2 1 3 1 2 1	1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 4 0 3 1 1 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1	92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 120 127 128	1 1 1 3 1 2 1 1 1	1 1 2 1 2 1 5 3 2 1 3 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2 1 1	1 1		1   1   2   3   6   5   3   4   1   3   1   2   2   1   1   1   2   2   1   1
2		3 15	5 5	2	0 25		16	35	11	3	0	65
		TOT	AL ADU	JLTS/C	VIGERITY	′ - <b></b>	19	50	16	5	0	90
% ADULTS/OVIGERITY 21.1 55.5 17. 5.5 0												
MEAN 81 WEIGHTED MEAN ADULT LENGTH 97.7												
VAR. 8	VAR. 8 VARIANCE OF THE MEAN LENGTH 121.1									,		
Full=90-100%, Hi=60-89%, Med=30~59%, Lo=1-29%												

Table 21. Carapace length measurement and percent ovigerity summary of sampled female red king crab captured in statistical area 636401 during the commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, August 1–3, 1992.

Stat.Area 6	36401			Vess	el A	{			Date	81-	2 92			
JUVENILE (		E PER	% OV	GERIT	 ry		ADULI	SIZE	PER	% OVI	GERI		Sum	
50 51 52 53 54 55 56 57 1 58 1 59 60 61 62 63 64 63 64 63 64 67 3 68 2 69 1 70 3 71 2 72 73 74 75 76 77 78 79 80 80 80 80 80 80 80 80 80 80	60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90	1 2 1	1 1 1 1			00000010001130200110000000000	91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122			•				
25	1	4	6	0	0	11		0	0	0	0	0	0	
TOTAL ADULTS/OVIGERITY 1 4 6 0 0 11														
% ADULTS/OVIGERITY ~ - 9.09 36.3 54. 0 0														
MEAN 66.3 WEIGHTED MEAN ADULT LENGTH 75.0														
VAR. 18.6	VARIA	NCE C	OF THE	MEA	N LE	NGTH	15	.4			<b>~</b>			

Full=90-100%, Hi=60-89%, Med=30-59%. Lo=1-29%

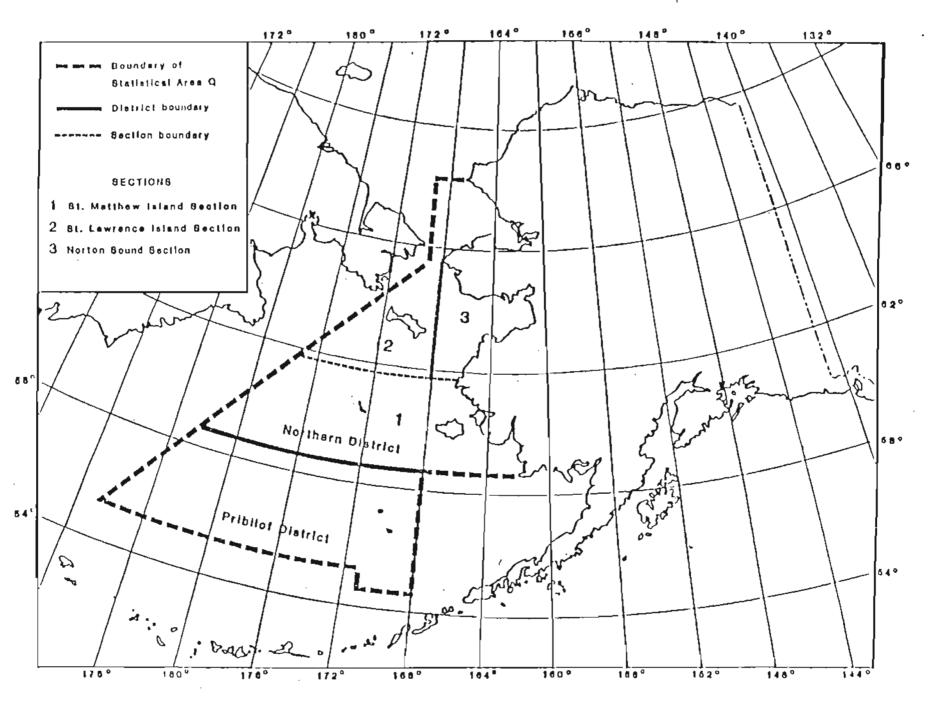


Figure 1. King crab fishing districts and sections of Statistical Area Q

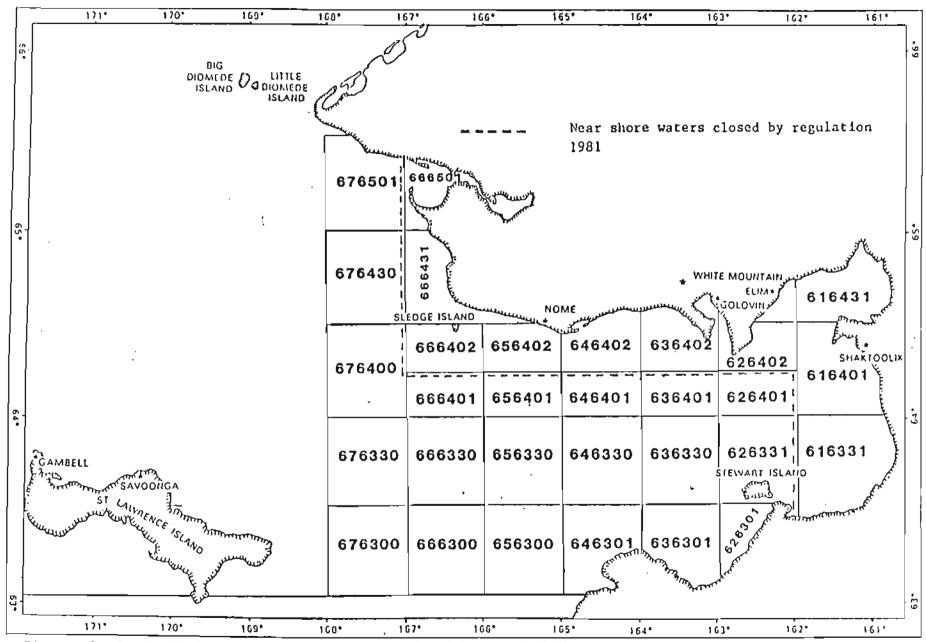


Figure 2. Statistical areas for the Norton Sound red king crab fishery.

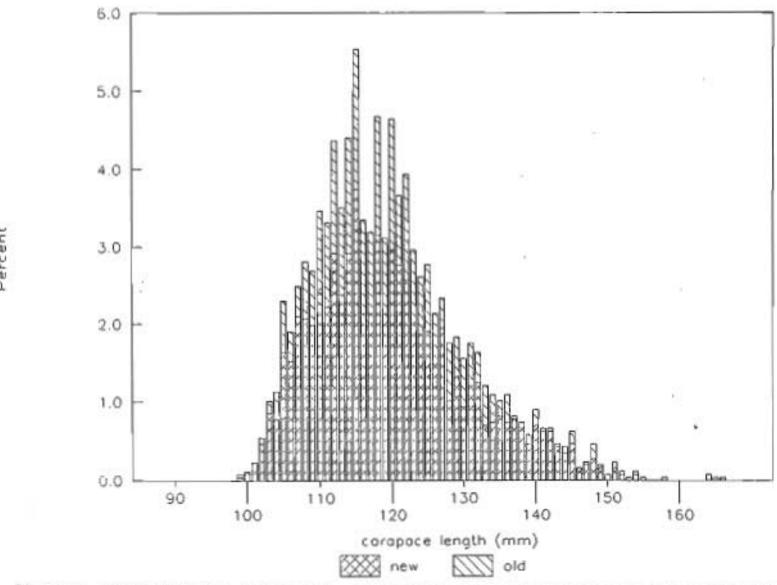


Figure 3. Length frequency distribution and frequency of ~ew and old carapace age condition of legal male king crab, Norton Sound Section, Eastern Beri 3a, August 1-3, 1992.

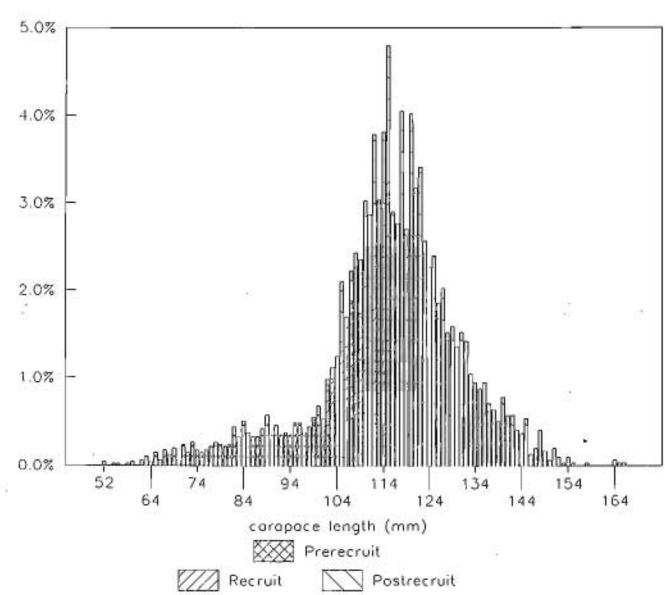


Figure 4. Length frequency distribution of prerecruit, recruit, and postrecruit male red king crab, Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

# Sublegal (prerecruit) red king crab

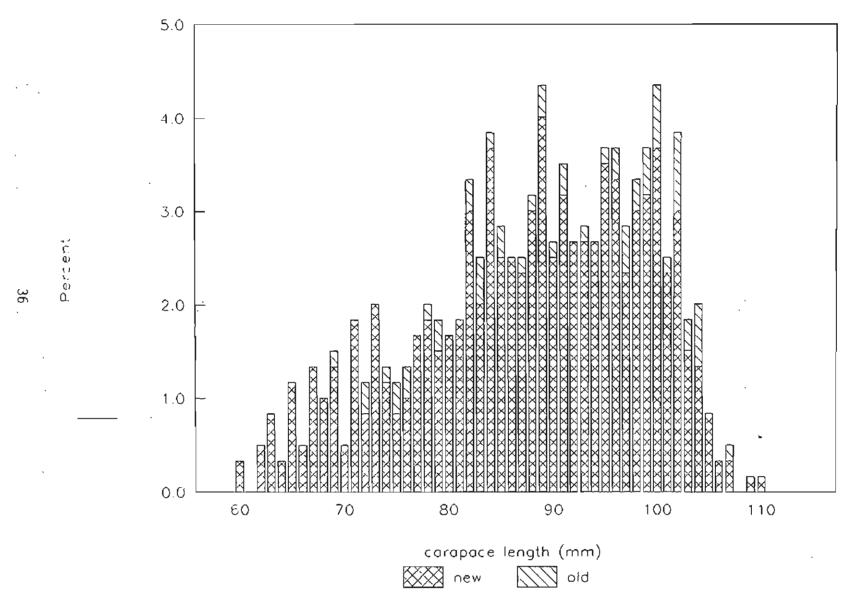


Figure <sup>c</sup> Length frequency distribution and frequency of "ew and old carapace age condition of prerecruit male king crab, Norton Sound Section, Easterr ing Sea, August 1-3, 1992.

# Female red king crab

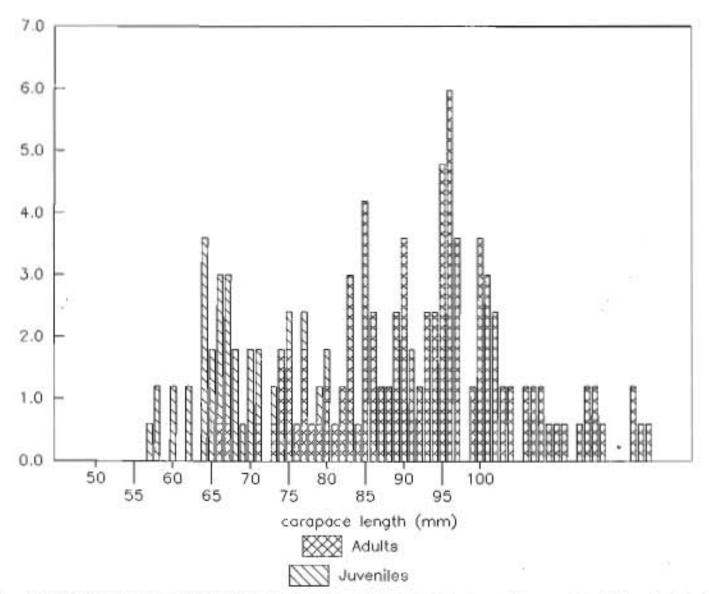


Figure 6. Length frequency distribution of female red king crab, juveniles, and adults, Norton Sound Section, Eastern Bering Sea, August 1-3, 1992.

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			1	